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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/725,166 11/29/00 BADEHI

A 41158

EXAMINER

001609 MM91/1011
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SUITE 600
WASHINGTON, DC 20036

THAT L
ART UNIT

PAPER NUMBER

2811
DATE MAILED:

10/11/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/725,166

Applicant(s)

BADEHI, AVNER PIERRE

Examiner

Luan Thai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 20-29, 33, 34 and 36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19, 30-32 and 35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restriction

Applicant's election without traverse of group I, claims **1-19, 30-32, and 35** in Paper No. 6 filed April 16, 2001 is acknowledged.

Note that misnumbered claims **6-37** have been renumbered **5-36** (paper Number 5).

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 250 words. It is important that the abstract not exceed 250 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims **6, 16 and 32** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim **32**, the limitation of "a chip scale packaged crystalline substrate according to claim 1" is unclear since claim 1 recites "a crystalline substrate based device".

In claims **6 and 16**, the limitation of "said at least one cavity" has no antecedent basis.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2, 4, 6, 10-11, 13, and 16, insofar as in compliance with 35 USC 112, are rejected under 35 U.S.C. 102(b) as being anticipated by Furuyama (5,719,979 of record).

Regarding claims 1-2, 4, 6, 10-11, 13, and 16, Furuyama (figures 1-19), specifically figures 2-12, show a crystalline substrate base device comprising: a crystalline silicon substrate 1 having formed thereon a microstructure 6 or 7 which is considered as a chip scale package; a packaging layer 16 which is sealed over the microstructure by means of an adhesive 14-12 and defines

therewith a gap between the silicon substrate and the packaging layer, and wherein there is a cavity comprising a plurality of cavities (see figures 2, 11, 16-19).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3, 5, 7-9, 12, 14-15, 17-19, 30-32, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuyama (5,719,979 of record).

Regarding claims 3 and 12, Furuyama disclose(s) all the limitations of the claimed invention as detailed above except for clearly teaching the adhesive comprising epoxy. An adhesive comprising epoxy is conventional in semiconductor art, specifically in optical device package, for using as an airtight sealing insulator. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an adhesive comprising epoxy for sealing the packaging layer onto the silicon substrate of Furuyama's device. Note that U.S. Pat. No. 5,505,985 to Nakamura et al. (Col. 16, lines 32+) is cited to support the well known position.

Regarding claims 7-9, 17-19, and 31-32, Furuyama disclose(s) all the limitations of the claimed invention as detailed above except for clearly teaching

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the microstructure comprising one of micromechanical structure (claims 7 and 17), microelectronic structure (claims 8 and 18), optoelectronic structure (claims 9 and 19), or a surface acoustic wave device (claims 31-32). It is well known within the skills of an artisan to choose the most suitable microstructure, such as micromechanical structure, microelectronic structure, optoelectronic structure, or a surface acoustic wave device, depending on the application in hand.

Regarding claims 5 and 15, Furuyama disclose(s) all the limitations of the claimed invention as detailed above with the exception of the packaging layer being transparent (claim 5) or the package being at least partially transparent (claim 15). It is well known within the skills of an artisan to choose the most suitable packaging layer (e.g., cover, cap, etc.), such as a transparent or the package being partially transparent, depending on the application in hand.

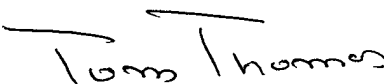
Regarding claims 14, 30 and 35, Furuyama disclose(s) all the limitations of the claimed invention as detailed above except for specifying the crystalline substrate comprising lithium niobate (claim 14), lithium tantalite (claim 30, or quartz (claim 35). It is well known within the skills of an artisan to choose the most suitable semiconductor substrate comprising such as lithium niobate, lithium tantalite, or quartz, depending on the application in hand.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luan Thai whose telephone number is (703) 308-1211. The examiner can normally be reached on 7:00 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Luan Thai
October 9, 2001


TOM THOMAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800